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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/621,772

07/21/2000

John J. Berenz

12-1134

4998

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08/24/2004

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EXAMINER

AKHAVANNIK, HUSSEIN

ART UNIT

PAPER NUMBER

2621

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/621,772

Applicant(s)

BERENZ ET AL.

Examiner

Hussein Akhavannik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

37 C.F.R. 1.131

1. The declaration of prior invention pursuant to 37 C.F.R. 1.131 is proper and overcomes the 35 U.S.C. 103 rejections of claims 23-34, which cite the Son reference (U.S. Patent No. 6,323,761).

Response to Arguments

2. Applicant's arguments with respect to claim 23-39 filed July 6, 2004 on page 9, line 6 to page 10, line 14 of the Remarks have been considered but are moot in view of the new ground(s) of rejection.

The Applicant alleges that Lemelson et al fails to teach or suggest a processor sounding an alarm and recording the image of the person in a memory when the processor determines that the person is not an authorized vehicle occupant on page 9, lines 6-8 of the Remarks. The Examiner respectfully disagrees. Though the Applicant is correct in stating that one of ordinary skill in the art will recognize that it is not desirable to sound an intruder alarm during the process of being programmed with new authorized faces on page 9, lines 17-19 of the Remarks, one of ordinary skill in the art will also recognize that it is desirable to image an intruder using the same means as programming new authorized faces when sounding an alarm in order to collect information about the intruder. Turner (U.S. Patent No. 6,002,326) teaches that it is advantageous to sound an alarm and image the intruder because false alarms would be avoided in column 7, line 58 to column 8, line 4. Furthermore, by monitoring an emergency situation, Turner explains that the situation may be tracked and recorded until the authorities take over in column 2, lines 52-63. Therefore, it would have been obvious to one of ordinary skill in the art

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at the time the invention was made for the system of Lemelson et al to sound an alarm and record the image of the person in memory when the processor determines that the person is not an authorized vehicle occupant because the situation may be monitored until authorities arrive and false alarms would be minimized, as suggested by Turner.

The double patenting rejection of claims 35-39 is withdrawn because the published claims in Berenz et al (U.S. Patent No. 6,724,920) do not recite sounding an alarm when the processor determines that a person is not an authorized vehicle occupant.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 23-25 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Tumey et al (U.S. Patent Pub. No. 2002/0097145 A1).

Referring to claim 23,

i. An illuminator for illuminating a predefined field located outside of the vehicle and adjacent an entryway to an interior of the vehicle is explained by Tumey et al in paragraph 31. Tumey et al explain that an IR LED (113 in figure 2) for illuminating a user with the desired wavelength light may be placed facing the driver's side exterior of the vehicle.

- ii. A detector for detecting radiation reflected from a person located in the predefined field, the detector being responsive to the detected radiation for providing image signals explained by Tumey et al in paragraph 31. Tumey et al explain that a camera (103 in figure 2) may be placed facing the driver's side exterior of the vehicle and may also be adapted to be sensitive to IR wavelengths.
- iii. A processor that is responsive to the image signals from the detector is illustrated by Tumey et al in figure 2 by the central processor 108.
- iv. The processor including face recognition software for analyzing the image signals for facial features of the person located in the predefined field, the processor comparing facial features of the person to known facial features of authorized vehicle occupants to determine whether the person is an authorized vehicle occupant is explained by Tumey et al in paragraph 89.
- v. The processor causing the entryway to automatically become unlocked in response to a determination that the person is an authorized vehicle occupant is explained by Tumey et al in paragraph 90.

Referring to claim 24, the illuminator being an infrared source and the detector being an infrared detector for receiving reflected infrared radiation is explained by Tumey et al in paragraph 31.

Referring to claim 25, an infrared filter positioned between the detector and the predefined field is explained by Tumey et al in paragraph 31. In order to capture only the infrared spectrum, the camera (103 in figure 2) would inherently have to use an infrared filter so that the frequencies outside the infrared spectrum are not captured.

Referring to claim 27, the known facial features of the authorized vehicle occupants being facial images of the authorized occupants that are stored in a memory associated with the processor is explained by Tumey et al in paragraph 77. Tumey et al explain that the enrolled human facial image data is stored in RAM 110, which is associated with the CPU 108 as illustrated in figure 2.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 29-31 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tumey et al in view of Lemelson et al (U.S. Patent No. 6,400,835).

Referring to claim 29,

i. The illuminator being adapted to illuminate a predefined interior vehicle field and the detector being adapted to detect radiation reflected from an occupant of the vehicle that is located in the predefined vehicle interior field and to provide occupant image signals is not explicitly explained by Tumey et al. However, Lemelson et al explain in column 6, line 41 to column 7, line 7 and illustrate in figure 1 that an infrared illuminator is used to illuminate a field of the interior of a vehicle and that multiple camera are adapted to detect radiation reflected from the driver. The interior fields are illustrated by Lemelson et al in figure 1 by the dotted lines.

ii. The processor comparing facial features of the occupant image signals to the known facial features of authorized vehicle occupants and causing a vehicle operation to be performed in response to a facial feature match is not explicitly explained by Tumey et al. However, Lemelson et al explain in column 5, lines 1-30 and column 5, line 45 to column 6, line 36 that the facial features of a driver are compared with facial features of authorized drivers in order to close a switch to allow operation of a vehicle. By monitoring the interior of the vehicle in addition to the exterior of the vehicle (corresponding to claim 23), the vehicle will be better guarded against unauthorized users. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to illuminate a predefined interior of a vehicle, detect radiation reflected from an occupant of the vehicle that is located in the predefined vehicle interior field, and compare facial features of occupant image signals to the known facial features of authorized vehicle occupants and cause a vehicle operation to be performed in response to a facial feature match so that the vehicle protection is increased in the system of Tumey et al.

Referring to claim 30, monitoring gestures of the occupant and performing vehicle functions in response to the detected gestures is not explicitly explained by Tumey et al. However, Lemelson et al explain continuously monitoring an occupant in order to start the car in column 15, line 48 to column 16, line 25. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to monitor gestures of the occupant, as suggested by Lemelson et al in the system of Tumey et al because the occupant could not fool the system by using a mask (as explained by Lemelson et al in column 5, lines 1-18).

Referring to claim 31, the vehicle being started in response to the facial feature match between the occupant image signals and the known facial features is explained by Tumey et al in paragraph 29. Tumey et al explain that in addition to unlocking the door of the vehicle, the system may control the engine of the vehicle through the internal microprocessor 123.

Furthermore, Lemelson et al explain in column 3, lines 39-42 that a start switch is enabled once a driver is determined to be authorized to drive the vehicle.

Referring to claim 33, the processor actuating the intrusion alarm in response to determining that the facial features of the occupant image signals do not match the known facial features of authorized vehicle occupants is explained Tumey et al in paragraph 90.

Referring to claim 34, the processor recording an image of the occupant in a memory in response to determining that the facial features of the occupant image signals do not match the known facial features of authorized vehicle occupants is not explicitly explained by Tumey et al. However, Lemelson et al explain in column 5, lines 42-44 that if a face image of a person is not stored in the database (and thereby not authorized), then the image captured of the person maybe stored to supplement the images in the database. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to record an image of the occupant in a memory in response to determining that the facial features of the occupant image signals do not match the known facial features of authorized vehicle occupants so that the database maybe expanded for additional drivers.

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tumey et al in view of Lu et al (U.S. Patent No. 5,331,544).

Referring to claim 26, the infrared source including a cluster of infrared light emitting diodes is not explicitly explained by Tumey et al. However, Lu et al explain in column 5, lines 32-34 and illustrate in figure 3 by reference number 56 that an array of infrared light emitting diodes are used to illuminate a face in a facial recognition system (illustrated in figure 5). It would have been an obvious matter of design choice to one of ordinary skill in the art at the time the invention was made to modify the system of Tumey et al by using an array of infrared light emitting diodes to illuminate the face of a person, since the Applicant has not disclosed that using a cluster of infrared light emitting diodes solves any stated problem or is for any particular purpose and it appears that any infrared light emitting source would perform equally as well.

8. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tumey et al in view of Numazaki et al (U.S. Patent No. 6,144,366).

Referring to claim 28, the illuminator being pulsed on and off, the detector obtaining a first image when the illuminator is on and obtaining a second image when the illuminator is off, and the processor determining a difference between the first and second images to mitigate the effects of ambient light is not explicitly explained by Tumey et al. However, Numazaki et al do explain generating a first image when an infrared source is on and generating a second image when an infrared source is off and determining a difference between the first and second images to mitigate the effects of ambient light in column 10, lines 40-56, column 11, lines 9-56, and column 14, lines 23-42. Numazaki et al also explain using this processing in a facial recognition system in column 32, lines 43-58 and illustrate the facial recognition system in figure 33. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to obtain a first image when the illuminator is on and obtain a second image when the

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illuminator is off and determine a difference between the first and second images to mitigate the effects of ambient light in order to determine a more accurate image of a face in the facial recognition system of Tumey et al by eliminating the effects of external lights sources.

9. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tumey et al in view of Lemelson et al, and further in view of Heslin et al (U.S. Patent No. 6,326,613).

Referring to claim 32, the processor, in response to a facial feature match, identifying the occupant and limiting operation of the vehicle to a maximum driving speed associated with the identified occupant is not explicitly explained by Tumey et al or Lemelson et al. Though Lemelson et al do explain changing the settings of a vehicle according to the recognized user in column 11, line 59 to column 12, line 10, they do not explain controlling the vehicle speed. Heslin et al do explain identifying a driver and limiting the vehicle to a maximum driving speed associated with the driver in column 7, lines 11-14. The system of Tumey et al and Lemelson et al controls the parts of the vehicle engine so that the car may be automatically started as explained by Lemelson et al in column 16, lines 9-25, so embedding a speed control means would be possible. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to limit operation of the vehicle to a maximum driving speed associated with the identified driver as explained by Heslin et al, so that the vehicle of Tumey et al and Lemelson et al is operated in safer conditions.

10. Claims 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson et al in view of Turner (U.S. Patent No. 6,002,326).

Referring to claim 35,

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- i. An illuminator for illuminating an interior portion of the vehicle is explained by Lemelson et al in column 6, line 65 to column 7, line 7 as an infrared laser.
- ii. A detector for detecting radiation reflected from a person located in the interior portion, the detector being responsive to the detected radiation for providing image signals indicative of an image of the person is explained by Lemelson et al in column 5, lines 19-30 and illustrated in figures 1 and 3. Lemelson et al explains that an infrared camera (12b) may be used in conjunction with the regular video camera (12a) to image the face of a person in a vehicle (11).
- iii. A processor that is responsive to the image signals from the detector is explained by Lemelson et al in column 11, lines 23-30.
- iv. The processor including face recognition software for analyzing the image signals for facial features of the person, the processor comparing facial features of the person to known facial features of authorized vehicle occupants to determine whether the person is an authorized vehicle occupant is explained by Lemelson et al in column 5, lines 1-30 and column 5, line 46 to column 6, line 31. Lemelson et al explain that the face images are compared with a stored set of face images of authorized drivers in order to determine a "match".
- v. The processor sounding an alarm and recording the image of the person in a memory when the processor determines that the person is not an authorized vehicle occupant is not explicitly explained by Lemelson et al. Lemelson et al do explain that if a person is not recognized, then an alarm is set to attract nearby persons in column 12, lines 34-42. Furthermore, Lemelson et al explain a means to capture an image of the occupant

if a face image of a person is not stored in the database (and thereby not authorized) in column 5, lines 42-44. However, Turner teaches that it is advantageous to sound an alarm and image the intruder because false alarms would be avoided in column 7, line 58 to column 8, line 4. Furthermore, by monitoring an emergency situation, Turner explains that the situation may be tracked and recorded until the authorities take over in column 2, lines 52-63. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the system of Lemelson et al to sound an alarm and record the image of the person in memory when the processor determines that the person is not an authorized vehicle occupant because the situation may be monitored until authorities arrive and false alarms would be minimized, as suggested by Turner.

Referring to claim 36, the illuminator being an infrared source and the detector being an infrared detector for receiving reflected infrared radiation corresponds to claim 35i-ii, wherein the infrared laser is an infrared source and the infrared detector receives infrared radiation.

Referring to claim 37, an infrared filter positioned between the detector and the predefined field is inherent in the camera 12 in figure 3 of Lemelson et al. The first section of the camera, 12A, captures conventional signals from the scene being imaged and the second section, 12B, captures infrared signals. In order to capture only the infrared spectrum, section 12B of the camera would inherently have to use an infrared filter so that the frequencies outside the infrared spectrum are not captured.

11. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson et al in view of Turner, and further in view of Lu et al.

Referring to claim 38, the infrared source including a cluster of infrared light emitting diodes is not explicitly explained by Lemelson et al or Turner. However, Lu et al explain in column 5, lines 32-34 and illustrate in figure 3 by reference number 56 that an array of infrared light emitting diodes are used to illuminate a face in a facial recognition system (illustrated in figure 5). It would have been an obvious matter of design choice to one of ordinary skill in the art at the time the invention was made to modify the system Lemelson et al by using an array of infrared light emitting diodes to illuminate the face of a person, since the Applicant has not disclosed that using a cluster of infrared light emitting diodes solves any stated problem or is for any particular purpose and it appears that any infrared light emitting source would perform equally as well.

12. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson et al in view of Turner, and further in view of Numazaki et al.

Referring to claim 39, the illuminator being pulsed on and off, the detector obtaining a first image when the illuminator is on and obtaining a second image when the illuminator is off, and the processor determining a difference between the first and second images to mitigate the effects of ambient light is not explicitly explained by Lemelson et al or Turner. However, Numazaki et al do explain generating a first image when an infrared source is on and generating a second image when an infrared source is off and determining a difference between the first and second images to mitigate the effects of ambient light in column 10, lines 40-56, column 11, lines 9-56, and column 14, lines 23-42. Numazaki et al also explain using this processing in a facial recognition system in column 32, lines 43-58 and illustrate the facial recognition system in figure 33. Therefore, it would have been obvious to one of ordinary skill in the art at the time the

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invention was made to obtain a first image when the illuminator is on and obtain a second image when the illuminator is off and determine a difference between the first and second images to mitigate the effects of ambient light in order to determine a more accurate image of a face in the facial recognition system of Lemelson et al and Turner by eliminating the effects of external lights sources.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bonneau, Jr. (U.S. Patent No. 5,581,630) – To exhibit a camera mounted adjacent to a vehicle in figure 1 and a security system which recognizes a driver and unlocks the door as illustrated in figure 5.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

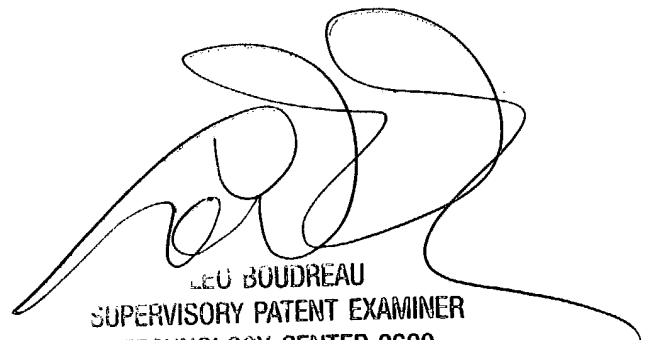
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hussein Akhavannik
August 16, 2004

HA.



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